

Seeing is Disbelieving: The Depths and Limits of Factual Misperception in Modern War

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Abstract:

When do civilians develop accurate – or biased – factual beliefs about what is happening in war? While there is ample literature on the micro-dynamics of conflict, there is little work on peoples’ factual beliefs in war. Yet such beliefs are crucial, as they form the basis of wartime opinion and action. In this study, we build an original theory of factual beliefs in conflict which distinguishes between two types of civilian communities based on their exposure to the fighting. We test these claims with a unique survey in Iraq which asked a series of factual questions about the Coalition anti-ISIL airstrikes in Iraq. We find that factual misperceptions about the strikes are widespread, but civilians with more exposure to the campaign are far less likely to embrace these falsehoods. This reveals that lies, misperceptions, and “fake news” are endemic in war, but can be punctured by high stakes and direct exposure.

“The truth is not half so important as what people believe to be true” – Napoleon

“You can’t cover up the sun with a finger” – Pashtun saying

Why do civilians in warzones often have widely divergent beliefs about the “facts on the ground” in the dispute – that is, *about what is happening in the fighting?* Indeed, in our ongoing era of “mediatized war” (Maltby 2012), in which information about conflict events often reaches millions of people in warzones and beyond, such variation is widespread. Consider, for example, the accusations that the Syrian regime has repeatedly attacked rebel-held towns with Sarin gas in the country’s ongoing conflict since 2011, killing hundreds of civilians in places like Ghouta and Khan Shaykhun. While some Syrians believe these were indeed indiscriminate and brutal attacks by the Assad regime, others genuinely believe they were fabrications, selective strikes on foreign jihadis, or “false flag” operations designed to smear the regime and prompt external intervention. In a recent interview, one Syrian responded incredulously to these allegations: “Do you think our president could put down his own people?...Gas his own people? Kill his own people? This is the work of foreign fighters. They want to change our culture” (di Giovanni 2016: 58).

Such variation in civilians’ factual beliefs in war is critically important. Indeed, we know that civilian communities play crucial roles in armed conflicts, both by providing material inputs such as supplies, recruits, shelter, and information to combatants (e.g., Sewall et al. 2007) and by shaping their political calculations about whether to escalate, negotiate, or pursue other strategies in the dispute. Moreover, civilians’ factual beliefs form the foundation of their wartime opinions and actions – civilians react not to what is happening, but to what they *think* is happening in war. For example, for Syrians who come to think that the alleged chemical attacks at places like Khan Shaykhun were in fact perpetrated by the West or the opposition, reconciliation with these forces

becomes even more remote of a possibility. These factual beliefs thus influence their preferences about whether the regime should continue escalating the fighting or attempt to negotiate with the other side for a peaceful resolution to the conflict.

Yet, existing conflict research has paid little attention to this variation and why it occurs. Indeed, while there has been an explosion of research on the micro-dynamics of armed conflicts in recent years, it has largely focused on combatants' *actions and behaviors* – including patterns of violence, governance, and resistance (Kalyvas 2006, Condra and Shapiro 2012, Schutte 2015, Johnston and Sarbahi 2016) – within armed conflicts. Recently, a small handful of analyses have deviated from this trend and investigated civilians' *loyalties and attitudes* within violent disputes (e.g., Jaeger et al. 2012, Lyall, Blair and Imai 2013, Garcia-Ponce and Pasquale 2013). However, neither stream of research tackles the task of analyzing civilians' *factual beliefs* – what they even believe is happening – in war. This is particularly surprising given the ongoing surge of attention to these kinds of beliefs – with burgeoning literatures on political rumors, factual misperceptions and corrections, conspiracy theories, and “fake news” – in the social sciences more broadly (e.g., Nyhan and Reifler 2010, Swami et al. 2011, Jolley and Douglas 2014, Garrett and Weeks 2017). However, despite the growing interest in such phenomena in peacetime and “normal” democratic politics, there has been little to no interest in how they work in war.

In this article, we build an original theory of factual beliefs in war. In particular, we argue that such beliefs hinge on two crucial factors: (1) the information civilians have about the events, and (2) their psychological motive when processing it. With this model, we differentiate between “local” civilians living in areas exposed to a given type of conflict event, who have superior local information about it and a strong motive to process it thoroughly, and “non-local” civilians living elsewhere in the conflict zone, whose beliefs are driven by motivated biases and media narratives

in the dispute. We thus argue that there are two types or “layers” of civilians in modern warzones who think differently based on their proximity to the actual fighting, thus shaping the accuracy of their beliefs and their immunity or susceptibility to misinformation.

In order to examine these claims, we analyze a unique national survey of contemporary Iraq carried out in 2016 by the Iraqi survey firm IIACSS. Crucially, the survey includes a series of questions on Iraqis’ factual beliefs about the ongoing Coalition airstrikes against ISIL in Iraq, plus questions on whether they have personally lived under ISIL control where the vast majority of the strikes have actually been conducted. In addition, we pair this survey with geolocated data on Coalition airstrikes obtained from *Airwars* – an NGO dedicated to tracking civilian casualties in the anti-ISIL campaigns – in order to exploit a behavioral measure of exposure to the strikes. Overall, the results are broadly supportive of our theoretical contentions: both experience under ISIL rule and close proximity to Coalition airstrikes significantly *reduce* factual misperceptions about the nature of the Coalition’s campaign, including beliefs about its targeting of Shi’a Arab militias and strategic benefits to ISIL. These results persist across a variety of robustness checks, including the addition of a number of important covariates and the use of alternative measures of key variables. Ultimately, the findings suggest that personal exposure is the antidote to wartime misinformation and propaganda – in short, that seeing is disbelieving.

From Behavior to Attitudes to Beliefs:

How do civilians in warzones form factual beliefs about what is going on in the dispute? Existing research on conflict largely ignores this question. Indeed, the growing body of research on the micro-level dynamics of armed conflict focuses heavily on the actions and interactions of combatants on the “battlefield” – particularly their patterns of violence, governance, and control

(Kalyvas and Kocher 2007, Condra and Shapiro 2012, Berman et al. 2013). While this work has helped us illuminate the causes and consequences of combatant behaviors, such as the effects of different types of counterinsurgency strategies on insurgent attacks, it has generally “bracketed” the attitudes and beliefs of civilian populations in the conflict zone (Lyall, Blair, and Imai 2013). However, simply ignoring or assuming away civilian attitudes and beliefs is problematic, as they can diverge from combatant control in key ways, particularly over the long-term.

Meanwhile, a handful of recent studies have begun to fill this gap by exploring civilians’ loyalties in conflicts, and how such loyalties react to wartime violence (Jaeger et al. 2012, Lyall, Blair, and Imai 2013, García-Ponce and Pasquale 2013). While this research has made some key contributions, it has two primary limitations for our purposes. First, like the behavioral literature noted above, these studies are highly localized in nature, analyzing civilian reactions to violence in the particular village, community, or perhaps district in which it takes place. In contrast, there is scant attention to the perceptions (or misperceptions) of broader populations spread across the wartorn society, and the role of media, propaganda, and psychological variables in shaping them. Second, these studies examine how civilian populations react to conflict events, but not how they form factual beliefs about these events to begin with. We thus build on extant attitudinal research in war by examining the prior question of how factual beliefs about conflict events and dynamics – which may then shape attitudes and behaviors – come to form in the first place.

One partial exception to this neglect of factual beliefs in conflict settings is a recent study by Driscoll and Maliniak (2016). These scholars fielded a pair of surveys in post Soviet Georgia, one shortly before and one shortly after the country’s brief and ill-fated war with Russia in 2008. While the principal focus of the study was on leadership evaluations during foreign policy crises, they do document a “Fog of War” effect wherein “many respondents earnestly reported believing

different things about the events they had just lived through” (266). Yet, in this sense, their study simply highlights that there is broad variation in factual beliefs, but does little to actually explain and understand it. Indeed, Driscoll and Maliniak chiefly attribute such variation to the chaos and the confusion – or “fog” – of war, stating that “our interpretation of these trends is simple: media coverage of the war was confusing, and these confusions were internalized by Georgian citizens in the form of internally coherent narratives” (272). In contrast, we contend that this variation in factual beliefs in war is not just the result of cognitive confusion and wartime uncertainty, but of predictable informational and motivational factors shaping how people think in conflict settings. These dynamics in fact occur in almost all wars, including those much longer and larger than the Russo-Georgian War of 2008.

A Theory of Factual Beliefs in War:

Below, we build an original theory of factual beliefs in war. In particular, we examine the role of two key variables crucial to this process – people’s motivation and their information – in turn, exploring how they diverge for non-local vs. local civilians.

The Role of Motivation:

Decades of research in social psychology show that people often process new information about the world in ways that preserve their preexisting attitudes and ideologies. Specifically, they frequently indulge in “motivated reasoning” – thinking directed toward reaching the conclusions that achieve their core emotional and psychological goals (Kunda 1990, Taber and Lodge 2006). In fact, studies show that when people have powerful “directional biases,” they not only arrive at self-serving answers, but that they actually process and access information distinctly in doing so.

These dynamics have been witnessed across a variety of social, economic, and political contexts, from legal disputes (Braman and Nelson 2007) to political campaigns (Taber and Lodge 2006) to economic outcomes (Benabou 2013).

These tendencies should extend to civilians in violent conflicts as well. While individual civilians are not just microcosms of overarching “master cleavages” (Kalyvas 2006), neither are they simply “blank slates” that all understand battlefield behavior in the same exact way. On the contrary, people often harbor strong preexisting attitudes and orientations toward the combatants in war which they will attempt to uphold when absorbing new information about their behaviors. For example, if a civilian has a deep animosity toward one of the combatants (or the community that it claims to represent), he or she will “want to believe” that it was indifferent to any civilian casualties that may have happened during its activities – or even that such harm was intentional. To do otherwise would be to threaten, undermine, or challenge this prior belief, which would be cognitively and emotionally costly for the person.

Indeed, examples of this type of reasoning abound in war. For instance, one of the most notorious pieces of anti-Germany atrocity propaganda in WWI was the “German corpse factory” – a fake story that the German army was rendering trainloads of its own casualties in a factory in order to extract their fats for the war. Although probably the most “appalling atrocity story of the war” (Knightley 2004: 114), it became very influential in Allied nations because “many people wanted to believe it...to think that the enemy was the incarnation of evil helped the war effort” (Marlin 2002: 72). Similar dynamics are clear in more recent conflicts. During the bloody wars that ravaged the Balkans in the 1990s, for instance, there was often a sincere “denial” or refusal to believe among civilians of an ethnic group that one’s own forces were committing massacres or “ethnic cleaning” toward out-group civilian populations (di Giovanni 2007). Thus, harboring

strong animosities (affinities) toward a given combatant leads one to embrace (discount) stories of its atrocities – thus distorting beliefs about events in the dispute.

Yet people do not always, or unconditionally, hold self-serving beliefs. When the stakes are high enough, they will process new information more carefully and thoroughly in the pursuit of accuracy (Kunda 1990). Indeed, scholars have induced such an “accuracy motive” in subjects by increasing the payoffs or stated importance of tasks (McAllister et al 1979) or making people publicly justify their answers (Tetlock 1983). In these contexts, individuals tend to take longer, use fewer cognitive shortcuts and heuristics like outgroup stereotypes, and reach more accurate and unbiased conclusions about the situations or the issues at hand.

While these studies use modest economic payoffs or social pressures in order to motivate participants, we submit that there is no more powerful “accuracy motive” than physical survival. When people think that they or their families may be killed – when their lives are “on the line” – they will expend much more effort than they would under normal circumstances to interpret new information about the threat, adjusting (or abandoning) any preexisting attitudes and attachments as needed. While the process may be cognitively and emotionally costly, such cognitive effort or emotional discomfort is vastly overshadowed by the motive to survive. Indeed, studies show that the process of learning, updating, and adjusting preexisting beliefs is intimately linked to anxiety (Redlawsk et al. 2010), which is in ample supply in such life-and-death situations.

Examples of these tendencies in wars are clear as well. Indeed, Middle East war reporter Megan Stack (2010) noted that – while reporting on the Israeli bombing of southern Lebanon in 2006 from areas under fire – she was overwhelmingly focused on the nature of Israeli targeting, her own drive for physical survival, and the immediate goal of finding shelter. Accordingly, she readily absorbed any potential useful facts about the dangers facing her – such as the knowledge

that “roads are death” because the Israeli pilots were targeting southern Lebanon’s road network – that might help her survive. Likewise, a Pakistani journalist who has covered the tribal areas of Pakistan notes that the targets and results of U.S. drone strikes are well understood there because “for those who live the closest to the strike zones, drones are not just some abstract talking point. *Just getting through the day has become a high-stakes game*” (emphasis added).¹ In this manner, civilians who actually live in the line of fire have an intense “accuracy motive” to understand the nature of the fighting surrounding them; they must “get it right” in order to survive, regardless of their prior loyalties or ideologies.

The Role of Information:

In addition to motivation, the other major factor shaping how civilians perceive the nature of conflict events and dynamics is the information they possess about them. In fact, we know that the information “diet” that people consume shapes their attitudes and beliefs in a variety of areas, from foreign policy opinions to economic perceptions. Different sources of information influence what people see in two fundamental ways: (1) *selection bias*, or which events they report, and (2) *description bias*, or how they report them (McCarthy, McPhail, and Smith 1996). Indeed, studies show that there is considerable variation in which events attract attention in different newspapers (e.g., Danzger 1975, McCarthy, McPhail, and Smith 1996), and there is of course a large body of communications research on the divergent framing of these events across different media outlets, such as the dueling networks Fox, CNN, and MSNBC in the U.S context. This variation can arise from different resources and constraints or different interests and agendas.

These dynamics apply in warzones as well. Indeed, in the wake of most important attacks or incidents in a conflict, there is an inevitable contest between the two “sides” to mold how they

¹ Naheed Mustafa, “Drone Lands Dispatch: Letter from Pakistan,” *Foreign Affairs*, December 9, 2013.

are represented in the news (Tugwell 1986). As stated by one scholar, “each violent event creates an ‘opportunity space’ into which both insurgent and state seek to inject their narrative” (Stevens 2013: 93). Moreover, this avoids the issue of selection bias – that is, that an event might not even be reported at all in many sources, and that “atrocities propaganda” is frequently invented to smear the enemy (Marlin 2002). While some of these issues have been explored as coding challenges in conflict event data (Gerner et al. 1994, Otto 2013, Weidmann 2015), their consequences have not been fully considered for ordinary people in conflict settings. In fact, these issues are particularly acute in warzones, where much of the media is either state-owned (Djankov et al 2003), sharply split along the lines of the conflict, or vulnerable to combatant coercion or influence. In short, the media is not an impartial observer, but a weapon of war (Kalb and Saivetz 2007).

Given these conditions, there is unsurprisingly a long and deep legacy of biased reporting in wars. As documented by Knightley (2004), these dynamics were common from even the dawn of professional war journalism in the 19th century. In the U.S. Civil War, for example, “accuracy became a minor consideration” as casualty figures were manipulated, whole battles misreported, and entire reports faked by journalists on both sides (Knightley 2004: 26). Nor have these biases faded in more recent conflicts. From the Kuwaiti atrocities propaganda that fueled the 1st Gulf War (Marlin 2002) to the infamous radio stations of the Rwandan Genocide (Yanagizawa-Drott 2014) to the nationalistic propaganda machines of the Balkan Wars during the 1990s (Thompson 1999), tactics like the creation of atrocities propaganda, suppression of stories about one’s own atrocities, and manipulation of casualty counts have featured prominently in recent cases. And these persist in numerous conflicts worldwide today. One quantitative analysis of the Iraqi media found that it showed “approximately 10-15 references to erroneous reporting on casualty numbers” per month (Cioppa 2009: 38). Similarly, analysis of the local media coverage in the ongoing war in Ukraine

shows widely differential reporting about violence by government and rebel forces depending on the source's affiliation (Zhukov and Baum 2016).

Yet, as with motivation, the role of information in the formation of factual beliefs in war also differs between local and non-local civilians. While non-locals are often heavily influenced by these biased streams of news coverage, the same cannot be said about local civilians. Indeed, civilians living in areas directly affected by a given type of conflict event have an informational advantage in identifying its perpetrators, targets, consequences, and other features. Specifically, local civilians can rely on their own lived experience and the accounts of their relatives, friends, and peers who have often actually witnessed the incidents or their aftermath first-hand. As such, locals will generally be relatively resistant to broad elite- and media-driven narratives that clash with their local community's accumulated knowledge.

The ability of local information to puncture broad wartime narratives is often quite clear. Indeed, Davenport and Ball (2002) assess three types of information about Guatemalan violence from 1977-95: news coverage, human rights reports, and eyewitness testimony. While they find that all three have value, they conclude that civilians are the best informed on the events in their localities. Specifically, they explain that civilians "are useful for identifying what happened and who did it *within particular locales*" (emphasis added) (447). Likewise, in the case of American drone strikes in Pakistan, residents of the tribal regions – where they overwhelmingly take place – have long had the most knowledge about them. Indeed, when the first drone attack in Pakistan was launched against the local Taliban commander Nek Mohammed on June 18, 2004: "no one in the Pakistani public or media knew that it was a drone...The villagers, however, supplied the explanation: They collected the fragments of the missile, on which was printed in black, 'Made

in USA.”² Another such strike in 2005 provoked similar uncertainty until a local reporter from an adjacent village saw the debris and unearthed a Hellfire missile.³ Such revelations countered the Pervez Musharraf regime’s initial claims that Pakistani forces had conducted the operations. In this way, first- and-second hand knowledge of local civilians produced accurate beliefs about what was happening in war, even in the face of propaganda.

The Case of Coalition Airstrikes in Contemporary Iraq:

We investigate these dynamics in the context of the ongoing intervention against the ISIL insurgency in Iraq by the U.S.-led Coalition since August 2014. In this section, we first provide a brief overview of this empirical context, and then derive the specific hypotheses that follow from our theoretical argument in this setting.

In August of 2014, the U.S. started carrying out airstrikes against ISIL in order to impede its territorial advance and protect civilian populations in northern Iraq. Soon, it was assembling a growing Coalition of Western and Arab states to take offensive military action against the group. This was the start of a substantial multi-national aerial campaign against the Islamic State in Iraq – as of October 31st, 2016 (around the time of our survey), the U.S.-led Coalition had conducted 10,291 airstrikes against ISIL targets in Iraq, with 6,979 by America and 3,312 by allied nations (Airwars 2017). In addition to conducting thousands of airstrikes against ISIL, the Coalition has also collected a vast amount of aerial intelligence and surveillance data, trained many thousands of Iraqi soldiers, and supported Iraqi military operations against the group both strategically and tactically, with U.S. special operations forces embedded with some Iraqi units. This support from the Coalition has been key in turning the tide of battle in Iraq against ISIL.

² Pir Zubair Shah, “My Drone War,” *Foreign Policy*, February 27, 2012.

³ Ibid.

Critically, while there has indeed been collateral damage, the Coalition campaign overall has been highly discriminate in nature – especially during the period under analysis. Indeed, it is essential to first note that we are focused only on the Obama-era campaign through fall 2016, as the survey was fielded in September and October 2016 and we wish to understand how civilians perceived the nature of the airstrikes through that point. Thus, while there was a vast increase in the degree of collateral damage in 2017 as President Trump relaxed Obama-era targeting rules,⁴ the timing of the survey enables us to avoid the complications that would arise in characterizing the selectivity of the airstrikes now. On the contrary, the Obama-era campaign was criticized by some in both American and Iraqi military circles at the time for its extreme restraint and its strict procedures to avoid civilian casualties. According to disgruntled American soldiers, well-known ISIL structures were left standing due to concern for human shields, drones were forced to hover over targets for hours until footage showed they had “clean shots,” and roughly three-quarters of air missions saw no weapons released due to collateral damage estimates.⁵ In brief, some wished that the U.S. were *less* committed to such exceptional caution and precision.

This picture is corroborated by the available quantitative evidence. Data from *Airwars* – a British NGO which compiles the most comprehensive and transparent database of the airstrikes – shows that, even when including contested incidents, the 10,291 strikes to this point had killed an estimated 1,396 Iraqi civilians. This means that, when the survey was fielded, there was a ratio of around one civilian casualty for every 7.4 Coalition airstrikes. Given that the campaign has killed tens of thousands of ISIL fighters in Iraq and Syria, this implies a very high combatant to civilian casualty ratio. For the sake of comparison, consider that in the U.S. drone campaign in Pakistan –

⁴ See, e.g., Samuel Oakford, “Coalition Civilian Casualty Claims Double Under Donald Trump.” *Airwars*. July 17, 2017. <https://airwars.org/news/trumps-air-war-kills-12-civilians-per-day/>

⁵ See, e.g., Eric Schmitt, “U.S. Caution in Strikes Gives ISIS an Edge, Many Iraqis Say.” *New York Times*. May 26, 2015.

which, despite its controversial nature, is recognized by scholars as a very discriminate campaign (Taj 2010, Plaw and Fricker 2012, Fair, Kaltenthaler and Miller 2016, Silverman 2018) – there is about one civilian killed for every 1.6 strikes, according to data from the Bureau of Investigative Journalism (BIJ 2017). Meanwhile, the same source shows that there has been one civilian death for every 1.4 American drone strikes in Yemen and for every 2.5 American airstrikes in Somalia – in other words, that other targeted killing programs have killed civilians much more frequently than the campaign in question. In sum, a close look shows that the pre-Trump Coalition airstrikes against ISIL in Iraq were very discriminate in nature.

Yet, unsurprisingly given our discussion of information as a “weapon” in war, there have been considerable efforts to spread rumors, propaganda, and disinformation about the campaign. To begin with, ISIL itself has been one of the major sources of propaganda about the Coalition’s aerial campaign. The ISIL narrative about the campaign has focused largely on claiming that it is ineffective and that the group continues to advance despite aerial attack, and has also pounced on any civilian casualties to depict the bombardment as cruel and indiscriminate whenever possible. This information has been disseminated both virtually through ISIL’s Amaq news agency, Dabiq online magazine, and various affiliated Twitter accounts, and in more traditional forms within its own territory in Iraq (and Syria) through the group’s radio station, dedicated propaganda centers, and other brick-and-mortar methods.⁶ To pick just one example, the 4th issue of Dabiq magazine – released on October 11, 2014 – was entitled “The Failed Crusade” and dedicated largely to the “Crusader airstrikes” and their ineffective and indiscriminate results, emphasizing their inability to prevent ISIL advances and their slaughter of innocent Muslims in both countries (ISIL 2014).

⁶ See “Inside the Propaganda War for Mosul.” *Journal of Middle Eastern Politics and Policy*. February 5, 2017. <http://jmepp.hkspublications.org/2017/02/05/mosul-propaganda-war/>

Claims such as these are then amplified via ISIL's legions of affiliated Twitter accounts and can even seep into traditional media in Iraq and beyond.

Another key source of propaganda about the Coalition campaign is the *Hashd al-Sha'abi* or Popular Mobilization Forces (PMF). The PMF is a coalition of Shi'a Arab militias in Iraq that coalesced in 2014 to fight ISIL with Iranian backing (although it has now been incorporated into the Iraqi government). While the PMF has played a leading role in the fight against ISIL in Iraq, it has always existed in an uneasy alliance with the Coalition due to concerns about its treatment of Sunni Arab civilians and its largely anti-American orientation and close ties to Iran. For these reasons, despite its halting cooperation with the Coalition, the PMF has emerged as a key source of misinformation about the campaign. This misinformation centers around several core themes. First, it stresses how the Coalition's efforts are weak and ineffectual, instead positioning itself as the major force liberating the society from ISIL (Garrison 2017). Second, the PMF questions the Coalition's intentions and has increasingly suggested that it actively aids ISIL, including posting photos of Western helicopters which it alleged were transporting ISIL leaders on the battlefield.⁷ Third, it has depicted the Coalition as actively targeting the Shi'a militias themselves, seizing on rare "friendly fire" incidents from erroneous airstrikes (and inventing others) in order to advance this theme (Garrison 2017). Like ISIL, the PMF uses a variety of methods to spread its narrative, most notably its official *al-hashed.net* website and *Team Media War* Twitter account (which had one million followers by the end of 2016). Moreover, its voice is often amplified by Iranian state news as well as other pro-Iranian outlets within Iraq.

Overall, there is a wealth of propaganda and misinformation from various sources in Iraq about the Coalition bombing campaign against ISIL, suggesting that it is both (1) ineffective and

⁷ Ahmad Majidiyar, "Iran-Supported Militia Groups Intensify Anti-U.S. Propaganda." *Middle East Institute*. May 16, 2017. <http://www.mei.edu/content/article/io/iran-supported-militia-groups-intensify-anti-us-propaganda-iraq>

even counterproductive against the organization, and (2) inaccurate and indiscriminate in nature. While these claims often originate from combatants in the conflict such as ISIL and the PMF (as well as Iran and even Russia), they often influence and infiltrate more traditional forms of media coverage in the country. For instance, analysts have noted that infographics made by combatants such as ISIL or the PMF showing reports from the battlefield “can prove particularly effective in shaping traditional media coverage: because accurate casualty figures are notoriously difficult to obtain, the government faces continual pressure to refute [such] claims.”⁸ This is critical for our analysis because traditional media outlets such as *Al-Iraqiyya* state TV continue to be among the most important in the Iraqi media landscape (Amos 2010). In sum, then, the Iraqi population has been exposed to a substantial amount of propaganda, misinformation, and “fake news” about the dynamics and consequences of the Coalition’s actions in the conflict.

Empirical Hypotheses:

The critical question then becomes: who believes this misinformation and who does not? Based on the theoretical argument, we can derive several empirical predictions. First, in general, we should see variation based on civilians’ prior orientations toward the combatants – especially the perpetrator of the campaign, the U.S.-led Coalition. This flows from the motivated reasoning logic noted above: Iraqis who hold more unfavorable prior orientations toward the Coalition will be more likely to believe negative stories of its battlefield performance or behavior, as these will be more consistent with their worldviews. This leads to the following:

H1 (Motivational Bias): *Iraqis who hold unfavorable (favorable) prior orientations toward the Coalition will be more likely to form negative (positive) factual beliefs about the airstrikes.*

⁸ See f.n. 8.

Second, we should also generally see variation based on civilians' information diets and their exposure to distinct information streams about the fighting. Emanating from our argument about wartime media bias, we should specifically see that Iraqis who absorb news from sources which are more critical of the Coalition – and are thus likely to highlight its abuses and failures as opposed to its restraint and successes – will be more likely to embrace misinformation about the nature of the campaign. This yields:

H2 (Informational Bias): *Iraqis who absorb critical (favorable) information streams about the Coalition will be more likely to form negative (positive) factual beliefs about the airstrikes.*

Third, the argument also suggests that such motivational and informational biases should be diminished by personal exposure to the violence in question. Thus, we should see that “local” Iraqis who live under (or near) the airstrikes are *less* likely to believe negative propaganda about them than their “non-local” counterparts. As described in the theory section, this is both because such civilians can actually see the targets and results of the campaign (*informational advantage*) and because they have a psychological motivation to know what is happening (*accuracy motive*). To illustrate this point, consider the experience of civilians in Mosul, ISIL's largest stronghold in Iraq and the largest target of Coalition airstrikes in the country. Civilians in Mosul can see which buildings and neighborhoods have been hit by Coalition airstrikes and which have not. They also have a key motive to do so because they need to know how to stay safe and which areas to avoid. Likewise, such civilians are likely to know whether the strikes force ISIL to run and hide, change

its routines, or even retreat. This information, too, is crucial for their survival and their decisions about whether to stay put, flee, or even resist ISIL's rule. Accordingly:

H3 (Local Accuracy): *Iraqis who are more directly exposed to the Coalition airstrikes will form more accurate factual beliefs about them.*

In addition, we should also see people's direct exposure to the violence shape the impact of other types of factors. In particular, Iraqis who have direct exposure to the violence should be less affected by their prior orientations and their information sources in the dispute. Rather, they should not only hold more accurate beliefs, but also be willing to *update* those beliefs accurately regardless of their prior attitudes or information diets. In other words, the impact of these factors will be diminished or even disappear among local civilian communities.

H4 (Local Bias Resistance): *The factual beliefs of Iraqis who are more directly exposed will be less influenced by their prior orientations or information streams.*

Data and Methods:

In order to explore these hypotheses, we use data from a unique nationally representative survey of Iraq administered by the Iraqi polling firm IIACSS in September and October of 2016. Fielded amid intense fighting to reclaim parts of northern and western Iraq from ISIL, the survey was conducted with multi-stage stratified probability sampling of the entire adult (18+) populace of the country, excluding territory under direct ISIL control (chiefly Mosul). The survey spanned urban and rural areas throughout the country; the Primary Sampling Units (PSUs) were blocks in

urban areas and villages in rural areas. The interviews were done face-to-face by a mixed-gender team of veteran Iraqi enumerators, with women interviewing women and men interviewing men. Ultimately, the survey includes 3,500 respondents, with a 2,500 N original sample and a 1,000 N “booster sample” of Sunni Arab governorates and internally displaced persons (IDPs) from areas under ISIL control.

Great care was taken to ensure the safety of all of our respondents as well as enumerators. No interviews from ISIL-controlled areas were used in the study. After the interviews were done, the survey was weighted using demographic information from the 1997 and 2010 enumeration of all households in Iraq supplemented with 2015 projections from the Iraqi Central Organization of Statistics (COSIT). To probe for falsification of responses, we used the program “Percentmatch” and found no evidence that it occurred (see Online Appendix, Figure A1). Analysis of these data has been IRB approved.

Demographically, the sample is 54.2% male, with roughly half of the respondents under age 35 and over half not reaching secondary school. The ethnic and sectarian distribution of the sample is 12.9% Kurd, 39.0% Sunni Arabs, and 45.4% Shi’a Arabs (the Sunni Arab percentage is slightly inflated given the intentional oversample). Overall, these demographics are similar to other high-quality surveys in Iraq such as the Arab Barometer. Key demographic characteristics of our sample are compared with the second and third waves of the Arab Barometer – fielded in Iraq in 2011 and 2013 respectively – as well as recent Iraqi COSIT projections in more detail in Table A1 in the Online Appendix.

Substantively, the survey contained a number of different batteries of questions, with key modules about citizens’ perceptions of the major challenges that face Iraq, their levels of support for the political leaders and groups in the country, their means of acquiring political information,

their views of sectarian and ethnic tensions among Iraqis, and their attitudes and beliefs about the ongoing violent conflict with ISIL. We also collected a wealth of demographic information about each respondent, notably their socioeconomic background, experiences in the conflict, and ethnic and sectarian affiliation.

As our dependent variables, we use two items tapping into Iraqis' factual misperceptions about the Coalition campaign. Indeed, the survey asked Iraqis about their level of agreement (on a five-point scale) with the following factual claims: (1) *Coalition airstrikes mainly target PMF forces* and (2) *Coalition airstrikes mainly help ISIL*. As alluded to earlier, both of the claims are factually inaccurate. First, Coalition airstrikes do not “mainly target” the PMF; they target ISIL. While they have on rare occasion killed PMF fighters, there is no secret U.S. policy of bombing Shi'a militias in Iraq. Second, the strikes do not “mainly help” ISIL; they have been devastating to the group, removing thousands of its fighters, severely disrupting its activities, and ultimately serving as one of the key reasons why it has lost nearly all its territory in Iraq (Jones et al 2017). Overall, an average of 55.6% of respondents agreed to some extent with these claims, providing substantial variation in our outcomes to be explained. The distribution of the outcomes is shown in more detail in Figure A2 in the Online Appendix.

For the key independent variables in our analysis, we use a variety of different questions from the survey. Indeed, we measure motivational bias surrounding the strikes in two key ways. First, we use questions about respondents' attitudes toward some of the major combatants in the conflict – in particular the U.S. and the PMF. The question about the U.S. is a four-point measure of Iraqis' confidence in the United States' ability to responsibly deal with problems in the region. Given that the U.S. is the main perpetrator of the Coalition campaign, we expect that respondents with little confidence in the U.S. will *want to believe* the factual misperceptions about the strikes.

Meanwhile, the question about the PMF is a three-point measure of Iraqi support for the group's goals and activities. Given that the PMF is a key rival of the U.S.-led Coalition in Iraq and a key source of opposition and suspicion toward it, we expect that Iraqis who support the PMF will be motivated to accept these misperceptions. Second, we use Iraqis' sub-national group identities – in particular whether they are Shi'a Arab, Sunni Arab, or Kurd – to measure motivational biases toward the strikes. In Iraq today, Shi'a Arabs tend to hold more negative orientations toward the U.S. because it has acted as a check on Shi'a (and Iranian) influence in the country, while Sunni Arabs and Kurds tend to hold more favorable orientations toward the U.S. for this reason (Kose, Ozcan, and Karakoc 2016). Given this reality, we expect Shi'a Arabs to be more likely to accept the misperceptions, and Sunni Arabs and Kurds to be less likely to do so.

To capture informational bias surrounding the airstrikes, we use several items on Iraqis' "information diets" and how heavily they follow different types of news sources in the country. Indeed, the Iraqi news environment is sharply polarized along sectarian and other political lines (Amos 2010), with different Iraqi media channels varying in the information they present about the campaign against ISIL among other issues.⁹ We focus specifically on the respondents' level of exposure to three major outlets with different sectarian orientations: *al-Iraqiyya TV*, which is the country's state TV channel and is widely influential but largely seen as pro-government and pro-Shi'a in orientation, *al-Sharqiyya TV*, a private satellite channel that is more Sunni-friendly and often quite critical of the government, and *Rudaw TV*, a Kurdish outlet closely linked to the ruling Barzani family in Iraqi Kurdistan. Due to these sectarian affiliations, we expect exposure to *Al-Iraqiyya* to boost Iraqis' belief in factual misperceptions about the airstrikes and exposure to *al-Sharqiyya* and *Rudaw* to reduce such perceptions.

⁹ For example, some pro-Sunni sources like *Al-Baghdadiyya TV* have branded ISIL as "tribal revolutionaries," while pro-Shi'a sources like *Al-Iraqiyya TV* use language like "terrorists" or "terrorist gangs." See, e.g., Mohammed Salih. "Iraqi Media Divided in Coverage of IS Conflict." *Al-Monitor*. September 4, 2014.

In addition, to tap into local exposure to the violence, we use two related questions about peoples' experiences in the fighting. First, respondents were asked *whether they lived in an area while it was under the control of ISIL*. 21.3% of our sample (N=746) reports having experienced ISIL rule at some point. Notably, this is very similar to the 19% of the Iraqi population that ISIL is estimated to have presided over in Iraq at its peak strength in 2014 (Jones et al 2017). Second, if respondents reported that they did in fact experience ISIL rule, they were then asked *how long they lived in an area while it was under ISIL control*. There is substantial variation in this regard as well, with 47.5% of those respondents who lived under ISIL having done so for six months or less and the other 52.5% for over six months. While models with this variable must be limited to the sample of "local" Iraqis, as it is only asked among those who lived under ISIL rule, it will be extremely useful as an additional way to test our exposure hypotheses.

Finally, we include several covariates in the models in order to account for their possible influence on the misperceptions. To begin with, we include respondents' age, gender, education, income, and urban vs. rural status in the models. These represent key socioeconomic factors that have been linked to support for conspiracist beliefs and misperceptions in the region and beyond (e.g., Gentzkow and Shapiro 2004). Additionally, we include an indicator of internally displaced person (IDP) status, as this can strongly shape conflict attitudes (Gohnet, Cottier, and Hug 2016) but is different from actual exposure to the fighting.¹⁰ Table A2 in the Online Appendix contains descriptive statistics for all of the variables used in the analysis, while Table A3 includes the full question wording for all of the attitudinal items used from the survey. All models presented were

¹⁰ While one might initially think IDP status is a good indicator of local violence exposure, in fact IDPs in warzones often flee for social, economic, or psychological reasons, rather than actual violence exposure (e.g., Adhikari 2013). Moreover, even if they are fleeing from violence, it may be other types of violence besides the Coalition's airstrikes. Thus, IDP status is actually a poor measure of exposure to the strikes. Yet because IDPs often have especially strong grievances in the dispute, it is an important covariate to account for in the models

estimated with ordinary least squares (OLS),¹¹ with the dependent variables coded from 0 to 4 so that higher values indicate greater belief in each factual misperception.

Empirical Results:

Table 1 shows the results of the base models. As can be seen, there is significant evidence that Iraqis' factual beliefs about the airstrikes are shaped by their prior orientations in the dispute. In particular, we can see that Iraqis with higher confidence in the U.S. are significantly *less likely* to believe the two factual misperceptions about the Coalition's airstrikes, while those with higher support for the PMF are significantly *more likely* to believe them. Moreover, we can also see that Sunni Arabs and Kurds – the Iraqi identity groups expected to be most supportive of the strikes – are significantly less likely to believe the misperceptions. In contrast, Shi'a Arabs are more likely to do so (although the effects are not significant). Overall, these results provide empirical support for *H1*, suggesting that Iraqi civilians are forming factual beliefs about the airstrikes against ISIL – and whether they are fratricidal and counterproductive – in ways that fit their existing political, religious, and sectarian worldviews.

Turning to the informational variables in our model, many of these are significant as well. In particular, we can see that following *al-Iraqiyya TV* tends to boost belief in the misperceptions (particularly the perception that the Coalition campaign is targeting the PMF), whereas following *al-Sharqiyya TV* as well as *Rudaw TV* in most cases significantly decreases these misperceptions. These results fit with our theoretical expectations as well, as the different news sources have the expected consequences given their tendencies to present different information about the dispute. While self-selection into different types of news sources is always a concern, the fact that we see these effects even while controlling for sub-national Iraqi identity, among other factors, provides

¹¹ Results are substantively similar with ordered logit regression (see Online Appendix, Table A4).

an initial measure of confidence in their validity (we also conduct a number of robustness checks to boost our confidence later on). Overall, these results provide initial empirical support for *H2* – Iraqis’ factual beliefs are influenced by not only their own biases, but also by those they receive through the media within the broader conflict environment.

Table 1: Drivers of Iraqi Factual Misperceptions about Coalition Airstrikes

	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>		
Shi’a Arab	0.20 (0.15)	0.09 (0.15)
Sunni Arab	-0.44** (0.15)	-0.53*** (0.15)
Kurd	-0.93*** (0.20)	-1.40*** (0.20)
Confidence in U.S.	-0.30*** (0.03)	-0.22*** (0.03)
Support for PMF	0.13** (0.05)	0.16*** (0.05)
<i>Information streams</i>		
Iraqiyya TV	0.11*** (0.03)	0.03 (0.03)
Sharqiyya TV	-0.22*** (0.03)	-0.15*** (0.03)
Rudaw TV	-0.18*** (0.05)	-0.14** (0.05)
<i>Personal experiences</i>		
Lived under ISIL	-0.23** (0.08)	-0.25** (0.08)
Constant	2.86*** (0.21)	2.85*** (0.21)
Observations	2,263	2,263
R ²	0.34	0.32

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

**** p<0.001, ** p<0.01, * p<0.05*

Next, we turn to the experiential factors in the model. Here we see that local exposure to the violence does in fact diminish belief in both of the factual misperceptions. This offers initial

support for *H3*; Iraqis who have more direct exposure to the Coalition’s airstrikes are *less* likely to believe in propaganda and misinformation about them. In other words, seeing is disbelieving. In sum, the base model provides empirical support for the thesis that factual beliefs in warzones are often heavily biased, but that this bias can be alleviated by exposure to the conflict events or dynamics in question.

Meanwhile, Table 2 shows the results among the “local” civilian population – those who have actually lived under ISIL’s control – only. It should be noted that because the local civilian populace is overwhelmingly Sunni Arab, we do not include the sub-national communal identities in the model.¹² Overall, the picture among the local populace is very different. To begin with, the motivational bias factors are no longer significant – opinions toward the U.S. as well as the PMF are no longer significant predictors of the factual misperceptions among Iraqis who have lived in ISIL controlled-areas. This result is important, as it suggests that factual beliefs among locals are not driven by their prior views (*H4*). In other words, it suggests that local civilian communities – unlike their non-local counterparts – *update* their beliefs based on what is going on around them, regardless of their initial starting point.¹³

The informational bias factors also have a diminished impact among the local population. Indeed, the only news source that has a consistent impact is *al-Sharqiyya TV*, which significantly diminishes both of the misperceptions. Our interpretation of this is that it offers limited or partial support for *H4*, suggesting that local populations are largely able to resist media biases that clash strongly with what they see on the ground (e.g., *al-Iraqiyya* or *Rudaw TV*). Yet, they do not have complete information, and can thus be influenced by the degree to which they are made aware of

¹² Including these identity variables (there is a handful of Shi’a Arab and Kurdish locals) has no substantive impact. Results available upon request.

¹³ Moreover, the results do not simply reflect a lack of variation in local attitudes toward the U.S. and PMF. Indeed, variation in confidence in the U.S. increases among locals (std. dev. = 1.07 vs. 0.96) and variation in support for the PMF falls slightly (std. dev. = 0.77 vs. 0.82).

wider conflict events and dynamics outside of their communities from more independent sources (e.g., *al-Sharqiyya TV*).

Finally, we can see that – even among locals – greater exposure mitigates misperceptions. In particular, those who have lived under ISIL control for longer are less likely to believe that the strikes target Shi’a militias or that they help ISIL. These findings furnish additional evidence that direct exposure punctures factual misperceptions, while also suggesting that this process does not occur all at once but continues over time within local communities.

Table 2: Drivers of Iraqi Factual Misperceptions about Coalition Airstrikes, Locals Only

	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>		
Confidence in U.S.	-0.09 (0.05)	-0.00 (0.05)
Support for PMF	-0.14 (0.08)	-0.11 (0.08)
<i>Information streams</i>		
Iraqiyya TV	0.12* (0.06)	0.11 (0.06)
Sharqiyya TV	-0.26*** (0.07)	-0.24*** (0.07)
Rudaw TV	-0.21* (0.09)	-0.12 (0.10)
<i>Personal experiences</i>		
Time under ISIL	-0.20*** (0.04)	-0.21*** (0.04)
Constant	3.36*** (0.32)	3.18*** (0.33)
Observations	534	535
R ²	0.24	0.19

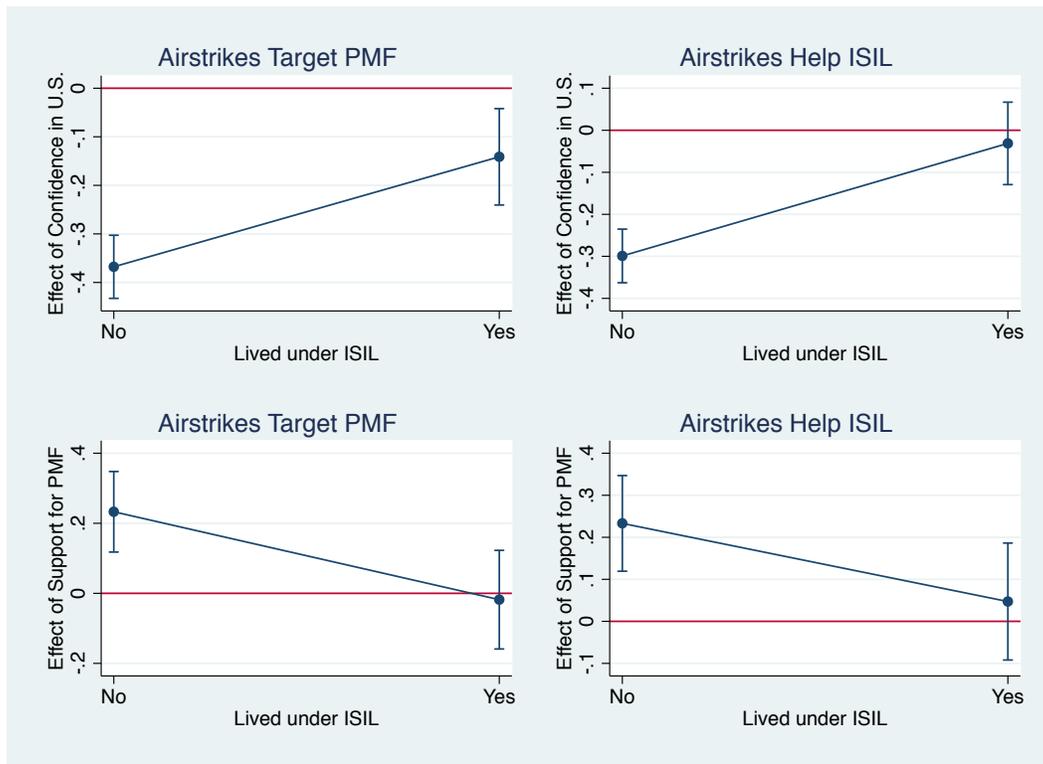
Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

**** p<0.001, ** p<0.01, * p<0.05*

To investigate the effects of exposure more deeply, we also analyze how some of the key motivational biases in our model interact with it. In particular, Figure 1 shows how the effects of

both confidence in the U.S. as well as support for the PMF vary by exposure in our base models. Starting with pro-American attitudes (the upper half of the figure), we can see that confidence in the U.S. significantly decreases both misperceptions among the non-local population, but among local civilians this effect disappears or is significantly weakened. Turning toward support for the PMF (the lower half of the figure), we can see that the same pattern emerges – pro-PMF attitudes significantly boost both misperceptions overall, but these effects disappear among local civilians. This drives home the point clearly that factual beliefs in war are generally biased in the direction of civilians’ existing orientations in the conflict, but that this bias is “disciplined” by exposure to the events in question.

Figure 1: Effect of Confidence in the U.S. and Support for the PMF on Misperceptions by Local Exposure



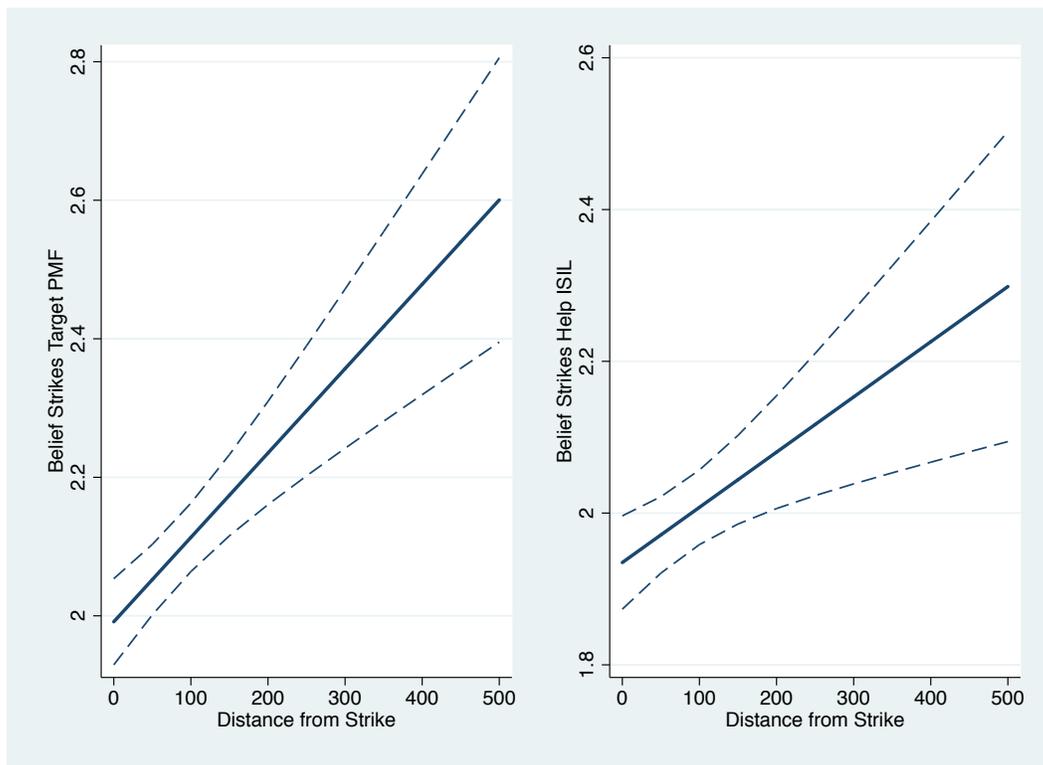
Note: figure shows marginal effect of confidence in the U.S. and support for the PMF by experience under ISIL rule. Results from OLS regressions, with 95% confidence intervals.

Despite the evidence presented so far, a skeptical reader might still be concerned that the measure of our main independent variable – exposure to the fighting – is self-reported in nature. This could leave it subject to potential reporting or recall biases, among other issues. To address this concern, we obtained data from the strike-tracking NGO *Airwars* on the reported location of all 10,000-plus Coalition airstrikes in Iraq. Premised on the model of the Bureau of Investigative Journalism’s Drones Project – the most comprehensive, transparent, and reliable public database of U.S. drone warfare in countries like Pakistan (Bauer, Reese, and Ruby 2015) – *Airwars* tracks the frequency, results (civilian casualties), and locations of all reported international airstrikes in Iraq and Syria. In its effort to do so, the organization relies on a wide range of sources, including international and local media, NGO reports, social media sites (e.g., so-called “martyrs’ pages”), and official statements by the combatants themselves. It then attempts to triangulate across these sources and investigate wherever possible, yielding a five-point scale of reporting quality for the alleged civilian casualties in each event, which runs from Discounted to Confirmed. Because the respondents in our survey are geolocated, we were able to match them with the *Airwars* data and create a measure of distance from the closest reported strike for each respondent.

To investigate the influence of this variable, we add it to our base models of both beliefs. The results show that proximity to the strikes significantly decreases both factual misperceptions (for the full results, see Table A5 in the Online Appendix). To illuminate these dynamics clearly, Figure 2 plots the predicted level of each misperception by respondents’ proximity to the strikes, with 95% confidence intervals. This figure indeed shows how both of the factual misperceptions – that the attacks target the PMF, and that they help ISIL – drop substantially as one moves from areas far away to those much closer to (and ultimately underneath) an airstrike. Additionally, the figure also conveys effects that are significant in substantive terms: because the outcomes are all

five-point scales coded from 0 to 4, the value “2” represents respondents precisely in the middle. Thus, the figure indicates that – for the “Targets PMF” as well as “Helps ISIL” misperceptions – those within roughly 50-100 miles of a strike are likely to reject the claim (or at least be unsure), while those outside this range are likely to believe them. This offers further evidence, based on a more direct and behavioral measure of personal exposure, that is consistent with our key thesis – that seeing is in fact disbelieving when it comes to factual misinformation in war.

Figure 2: Predicted Level of Factual Misperceptions by Respondent’s Distance from Strike



Note: figure shows predicted level of belief in each factual misperception by proximity to closest Coalition airstrike. Results from OLS regressions, with 95% confidence intervals.

Robustness Checks:

In order to increase confidence in the results, we conduct a number of robustness checks. First, one concern is that because the local populace (but not the general one) is overwhelmingly

Sunni Arab in composition, we are not comparing “apples to apples” when we analyze the effect of personal experience. This concern is lessened by the fact that we include sub-national identity in our models, and that some of the models only analyze differences *among* the local population. Yet, there may still be a concern that some of the results stem from the distinct sectarian profiles of locals vs. non-locals. To help mitigate this, we replicate the base and local models with Sunni Arabs only. Doing so has no substantive effect on the core results (Online Appendix, Table A6); exposure still diminishes misperceptions when we restrict our focus to Sunni Arabs only.¹⁴

Second, another potential concern is that locals could be motivated not by accuracy, but by anti-ISIL bias.¹⁵ Specifically, the worry is that locals may be more opposed to the group and more supportive of the airstrikes (and thus motivated to believe in their efficacy and accuracy). To mitigate this concern, we add several measures of Iraqi attitudes toward ISIL to the models, including (1) a direct question about support its goals and activities, (2) a more indirect question about its perceived influence on the country, and (3) a measure of distance from ISIL attacks as captured by the Global Terrorism Database (START 2017). The latter builds on recent research showing that insurgents often target more unsupportive areas with more violence (Hirose, Imai, and Lyall 2017). We add all three of these measures to the base and local models. The results of this test (see Online Appendix, Table A7) show that the key findings are unchanged; even when accounting for attitudes toward ISIL in multiple ways, we find that local civilians are less likely to accept the factual misperceptions about the strikes.

Third, another concern is that in a precarious environment like contemporary Iraq, some individuals (e.g., locals) may not have answered questions truthfully. To help ease this concern,

¹⁴ There is less consistent evidence of motivational bias due to prior views toward the U.S. and (especially) the PMF among the Sunni Arab subsample. Yet we still see experience under ISIL rule and time under ISIL rule significantly diminish both of the factual misperceptions among Sunni Arabs.

¹⁵ This could be due to anger given the group’s destruction of their communities or fear given that they may be attacked next if ISIL is not defeated.

we include enumerator observations about the level of (1) privacy, (2) comfort, (3) honesty, and (4) comprehension of each respondent during their interview. The results (see Online Appendix, Table A8) show that our findings are not sensitive to these measures; even when we account for the perceived honesty of the respondents and context of their interviews, our key findings about factual bias and the effect of local exposure remain. This militates against the idea that our main findings are driven by social desirability biases surrounding the willingness of different types of Iraqis to answer questions about external intervention.

Fourth, to further boost confidence in the validity of the findings, we replicate the models with new measures of support for the actors included – the U.S. and PMF. For the U.S., we use a question on the degree to which respondents perceive the U.S. as a reliable partner to Iraq ($r=.71$ with the original item). For the PMF, we use a question on people’s view of the PMF’s influence on the country ($r=.86$ with the original item). To explore the effect of these alternative measures, we replicate the interaction plots in which their influence on the misperceptions is plotted against respondents’ level of exposure to the campaign. The results of this analysis show that using these new measures has no substantive impact on our findings (see the Online Appendix, Figure A3).¹⁶ In both cases, Iraqis’ views of these combatants still shape their factual beliefs in general, but the effects disappear or are substantially diminished among locals. Ultimately, these robustness tests enhance our confidence in the validity of the core finding that personal exposure to the Coalition airstrikes diminishes factual misperceptions about them, showing that it persists when restricting the sample to just Sunni Arabs, accounting for attitudes toward ISIL in several ways, controlling for enumerator observations about interview quality and honesty, and using alternative measures of prior attitudes toward the relevant combatants.

¹⁶ The motivational bias is significantly reduced in three of four cases. In the fourth, the bias is no longer significant, but the reduction itself is not significant.

Conclusion:

As in other areas of social and political life, people in violent conflicts often form widely divergent beliefs about what is happening in their environment. Yet while there has been a surge of research on the micro-dynamics of conflict in recent years, there has been little to no attention to this issue. In this study, we developed an original theory of factual beliefs in war, arguing that they are the result of (1) civilians' information streams in the conflict and (2) their psychological motivation when they interpret that information. These factors combine to create a profound gap between "local" civilians living in areas exposed to the dynamics in question, who have superior information about them and a powerful motive to process it accurately, and "non-local" civilians living elsewhere in the warzone, whose beliefs are driven by their motivational biases and media narratives in the conflict. Pairing survey and event data from a country witnessing an active war, we then investigated this theory in the context of the Coalition air campaign against ISIL in Iraq. The results were broadly consistent with our argument – Iraqis' factual beliefs about the efficacy and targeting of the Coalition airstrikes were generally quite biased by their broader worldviews, but such biases were significantly mitigated by exposure and proximity to the events themselves. In this sense, the results confirmed that – when it comes to propaganda and "fake news" in war – seeing is disbelieving.

These results have some important implications for our understanding of armed conflicts. To begin with, scholars should recognize that conflict actors – particularly those outside a highly localized area – can form very different beliefs about the empirical nature of combatants' actions and behaviors in the dispute. Literatures that compare the effect of different types of behaviors – such as selective vs. indiscriminate violence (e.g., Kalyvas 2006, Schutte 2015) – by combatants should be careful to "ground truth" these differences in the relevant case and ensure that civilians

can actually recognize them. Otherwise, how can we expect them to act and react in the ways our theories predict? These issues may illuminate cases in which high levels of restraint spawn fierce counter-mobilization, or when excess and brutality provoke surprisingly little.

Additionally, the results help strengthen our understanding of civilian populations in war. In fact, research and writing on civilian populations in war has largely become split between two dueling perspectives. In one perspective, civilians are seen as “rational peasants” who respond to combatants rewards and punishments in ways that increase their odds of survival (Popkin 1979, Kalyvas 2006). In the other, they are treated as “ethnic partisans,” whose attitudes and behaviors are driven by powerful group identities and who are deeply biased against out-group combatants (Lyll 2010, Lyll, Blair, and Imai 2013). The results of our analysis suggest that both views are partly right and partly wrong. Specifically, there are two distinct “layers” of civilian populations in warzones who process information about the conflict quite differently: local civilians near the fighting who react rationally and non-local civilians removed from it who react in a more biased and motivated way. In this sense, the study has deeply unifying implications, revealing that both rational as well as motivational models of civilian populations may be at work at different levels of removal from any violent campaign.

These findings should also be of interest to scholars in political psychology and political behavior more broadly. Indeed, in recent years, there has been a surge of behavioral research on the abundance of political rumors, conspiracy theories, factual misperception, or “fake news” in mainstream politics (e.g., Nyhan and Reifler 2010, Uscinski and Parent 2014, Oliver and Wood 2014, Miller, Saunders, and Farhart 2016). While debates continue to rage about the strength of these beliefs, there is a creeping image that we are mired in a “post-truth era” in which the facts exert a dwindling effect on how people form opinions. This study shows that, while rumors and

lies are pervasive in wars, there are also clear boundaries to their appeal. In fact, it suggests that personal exposure is the antidote to lies and misinformation: local civilians who directly witness events and who have to make good choices to survive seek out the facts and cut through the lies. In this sense, the study offers a note of qualified optimism in the often-pessimistic debates about facts in politics – when people have enough “skin in the game” and can observe the dynamics in question, they will typically get it right.

The study also provides important implications for policymakers. For those attempting to mitigate or resolve armed conflicts, it suggests that encouraging combatants to exercise restraint, assist civilian communities, participate in peace negotiations, and undertake any number of other suggested actions inside a warzone is necessary but not sufficient for de-escalation. For instance, do ordinary Colombians *believe* that the FARC is actually demobilizing as a part of the society’s peace agreement or not? Without challenging broader motivational and informational biases that flourish in the conflict, these deeds may fall on deaf ears – or even have an exacerbating impact. Waging information campaigns to counter widespread rumors and lies should thus be a standard part of the peace-making toolkit. For instance, in the face of extensive propaganda by the Lord’s Resistance Army (LRA) that fighters who defect from its ranks will be killed by state forces, the Ugandan government and U.S. army have employed “defection messaging” via radio and leaflet to successfully refute these rumors and increase LRA defections.¹⁷

One potential remedy to these issues is to increase the supply of truth inside warzones by amplifying the voices of local civilian communities. Indeed, this approach would exploit the fact that the gap between local and non-local civilians may be not only a *problem* but also a *solution*,

¹⁷ See, e.g., Ledio Cakaj and Paul Ronan, “The Lord’s Resistance Army is finally weakening in central Africa. This could dismantle it,” *The Monkey Cage*, December 6, 2016. https://www.washingtonpost.com/news/monkey-cage/wp/2016/12/06/uganda-is-about-to-give-up-looking-for-joseph-kony-but-defection-messaging-could-bring-his-army-to-a-halt/?utm_term=.8c207bc96dfe

and that local civilian populations in places like Mir Ali, Pakistan, or Mosul, Iraq, may be able to educate their non-local counterparts about what is happening on the front lines. Of course, such a strategy would only benefit those who want more “sunlight” shined on their battlefield behavior. In some ways, then, this suggestion helps clarify the battle lines over the degree of truth in war – whereas states that attempt to use force carefully such as the U.S. and the UK would (generally) benefit from more accurate information emanating from warzones, those that employ brutal and indiscriminate tactics like Russia and Syria would (generally) stand to lose from greater degrees of transparency about their behavior.¹⁸ The strategic consequences of the aggregate undersupply of truth in war thus differ based on the actor in question: it generally disadvantages the U.S. and its Western allies and helps many of its less constrained opponents.

Finally, the study offers key implications for us as information producers and consumers. Indeed, for information producers from war such as journalists, the project suggests that accurate war reporting requires being “on the ground” in directly affected areas and speaking to the locals about is going on, rather than reporting from the safety of capital cities or neighboring countries. Indeed, this is a major critique of reporting in conflicts like the Soviet-Afghan War in the 1980s, which often received reporting “from across the border in Pakistan, from brief visits to Kabul, or from furtive interviews with guerrilla fighters who soon developed a reputation for being willing to tell the correspondent whatever he wanted to hear” (Knightley 2004: 476). Moreover, datasets that track violent events – such as the Global Terrorism Database or UCDP/Prio Armed Conflict Database – should prioritize news reports with *local* civilian sources, or at least gather meta-data on the stories they use that allow users to do so. Lastly, for consumers of information about wars such as peace activists or ordinary citizens, they should be discerning customers of any narrative they hear about what is happening in a warzone. Scenes such as American “Code Pink” activists

¹⁸ Of course, many U.S. allies use indiscriminate tactics as well, as exemplified by the Saudi intervention in Yemen.

marching with non-local Pakistanis against U.S. drone strikes in the tribal regions of the country – while the voices of local Pakistanis are systematically suppressed – risk making these activists into tools of militant groups or intelligence agencies in the conflict.¹⁹ In sum, we must all reckon with both the depths – and the limits – of lies in war.

¹⁹ “US Activists Join Drone Protest in Pakistan,” *The National*, October 7, 2012.

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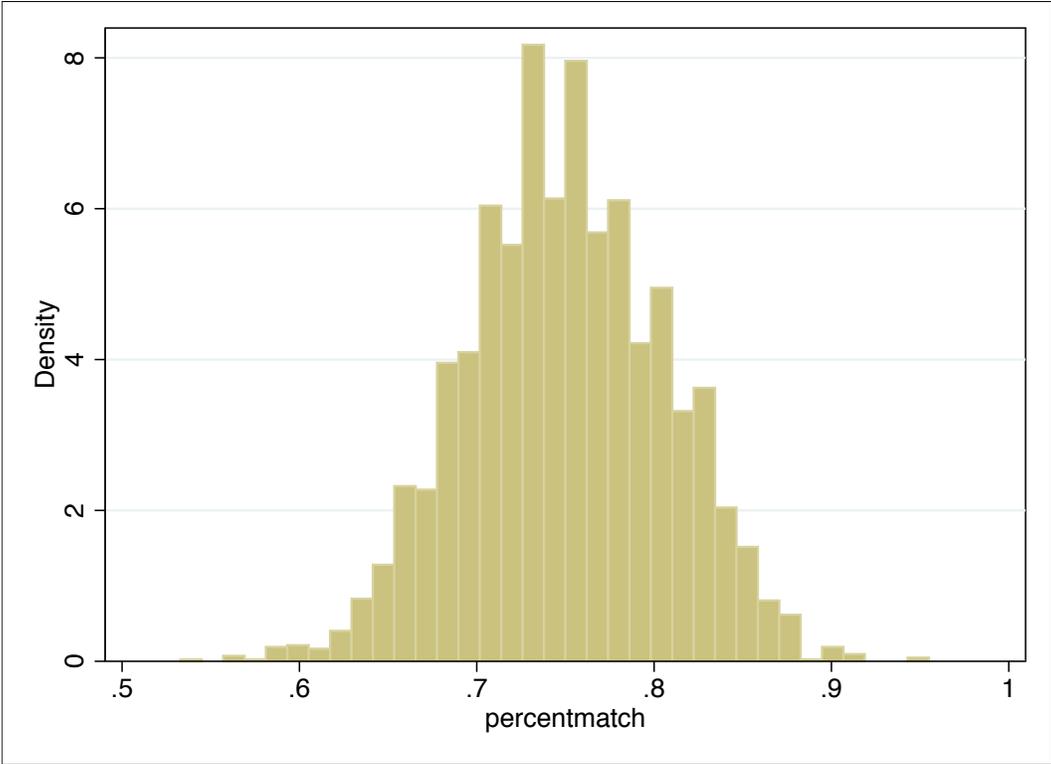
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Seeing is Disbelieving – Online Appendix:

Figure A1: Percentmatch Plot to Check for Data Falsification



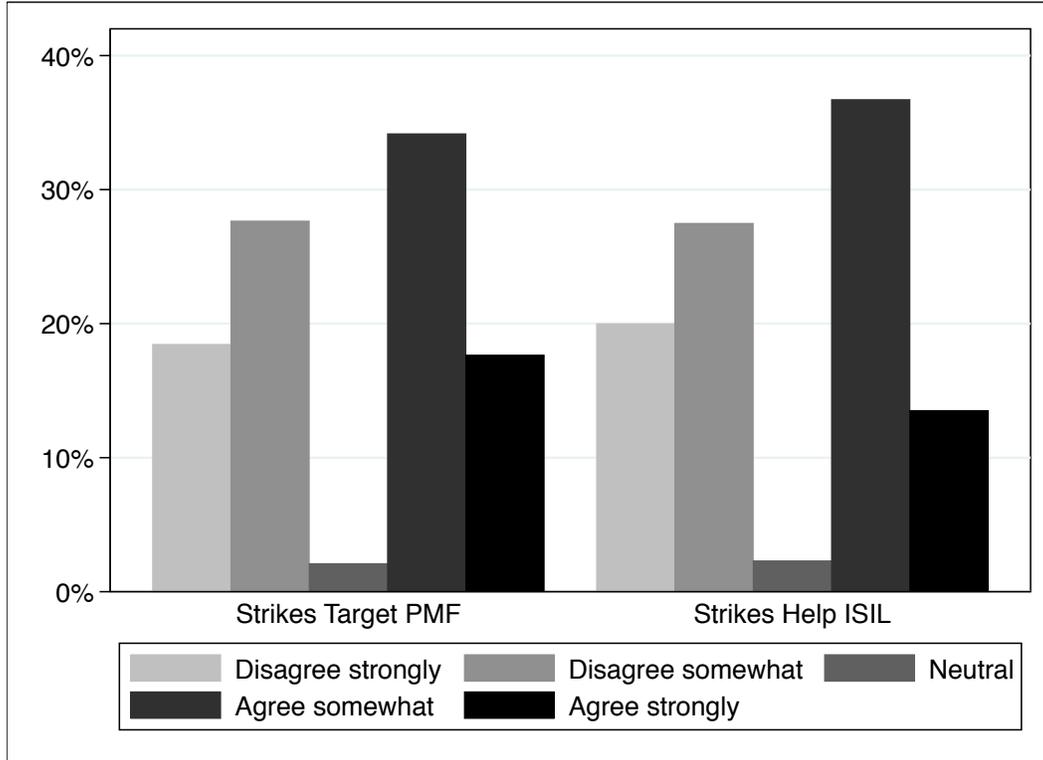
Note: plot shows healthy normal distribution centered at roughly 0.75, with no suspicious outlier clusters close to 1.

Table A1: Comparison of Sample Demographics with Arab Barometer Surveys and Iraqi Central Organization of Statistics (COSIT) Projections

	IACSS 2016	AB 2012	AB 2013	COSIT 2014
<u>Urban</u>				
Urban	66.5%	71.6%	69.1%	69.7%
Rural	33.5	28.4	30.9	30.3
<u>Gender</u>				
Male	54.2%	52.6%	50.0%	50.9%
Female	45.8	47.4	50.0	49.1
<u>Age</u>				
18-24	16.7%	22.8%	25.3%	25.2%
25-34	28.0	25.9	27.4	27.0
35-44	24.2	22.8	20.0	20.4
45-54	19.0	19.1	16.8	14.1
55+	12.1	9.6	10.5	13.3
<u>Unemployed</u>				
Yes	14.2%	14.0%	12.5%	14.3%
No	85.8	86.0	87.5	85.7
<u>Ethnicity</u>				
Arab	85.8%	83.5%	83.5%	
Kurd	12.9	14.6	14.6	
<u>Islamic Sect</u>				
Sunni	47.6%	45.9%	44.3%	
Shi'a	52.4	53.4	51.7	

Note: Arab Barometer respondents who identified as just Muslim were split between Sunni and Shi'a proportionally for purposes of comparison. There is no contemporary census data on the country's ethnic or sectarian composition (due to the political sensitivity of these issues).

Figure A2: Distribution of Belief in Factual Misperceptions about Coalition Airstrikes



Note: figure shows fairly normal distribution of both of the factual misperceptions. Middle response option (neutral) is less common because it was not offered by enumerators.

Table A2: Descriptive Statistics for All Variables Used

Variable	N	Mean	SD	Min	Max
Strikes target PMF	3,393	2.049	1.435	0	4
Strikes help ISIL	3,391	1.962	1.407	0	4
Shi'a Arab	3,500	0.454	0.498	0	1
Sunni Arab	3,500	0.390	0.488	0	1
Kurd	3,500	0.129	0.335	0	1
Confidence in U.S.	3,485	0.812	1.000	0	3
Support for PMF	3,426	1.399	0.826	0	2
Iraqiyya TV	3,479	2.054	1.146	0	3
Sharqiyya TV	3,478	1.883	1.187	0	3
Rudaw TV	2,773	0.545	0.947	0	3
Lived under ISIL	3,496	0.213	0.410	0	1
Time under ISIL	743	1.688	1.258	0	4
Age	3,500	37.78	12.71	18	80
Gender	3,500	0.542	0.498	0	1
Education	3,323	2.227	1.489	0	6
Income	3,259	3.763	1.776	0	6
Urbanity	3,500	0.665	0.472	0	1
IDP status	3,498	0.144	0.351	0	1
Distance to airstrike	3,500	87.18	125.8	0.233	469.3
Support for ISIL	3,433	0.027	0.219	0	2
ISIL influence positive	3,459	0.086	0.392	0	4
Distance to ISIL attack	3,500	6.188	12.06	0.004	180.9
Privacy	3,500	1.715	0.508	0	2
Comfort	3,500	0.896	0.305	0	1
Honesty	3,500	0.923	0.267	0	1
Comprehension	3,500	2.605	0.767	0	3
U.S. reliability	3,480	0.942	1.070	0	3
PMF influence positive	3,475	2.795	1.549	0	4

Note: table shows number of observations, mean, standard deviation, and minimum and maximum value for each of the independent variables used in the analysis.

Table A3: Question Wording for Attitudinal Survey Items

Variable	Question Wording
Strikes Target PMF	<i>“Please tell me whether you agree or disagree with the following statements regarding Coalition actions in Iraq. And is that somewhat or strongly?” [Coalition airstrikes mainly target PMF forces]</i>
Strikes Help ISIL	<i>“Please tell me whether you agree or disagree with the following statements regarding Coalition actions in Iraq. And is that somewhat or strongly?” [Coalition airstrikes mainly help ISIL]</i>
Confidence in U.S.	<i>“How much confidence do you have in the following countries to deal responsibly with problems in our region – a great deal of confidence, a fair amount of confidence, not very much confidence, or no confidence at all?” [The United States]</i>
Support for PMF	<i>“For each of the following groups, please tell me whether you support their goals and activities, support their goals but not their activities, or oppose them completely – or have you not heard enough to say?” [Popular Mobilization Forces]</i>
Iraqiyya TV	<i>“I’m going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Iraqiyya TV]</i>
Sharqiyya TV	<i>“I’m going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Sharqiyya TV]</i>
Rudaw TV	<i>“I’m going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Rudaw TV]</i>
Support for ISIL	<i>“For each of the following groups, please tell me whether you support their goals and activities, support their goals but not their activities, or oppose them completely – or have you not heard enough to say?” [ISIL]</i>
ISIL influence positive	<i>“Do you think the following organizations’ influence on internal events and affairs in Iraq has been completely positive, somewhat positive, neither positive nor negative, somewhat negative, or complete negative?” [ISIL]</i>
PMF influence positive	<i>“Do you think the following organizations’ influence on internal events and affairs in Iraq has been completely positive, somewhat positive, neither positive nor negative, somewhat negative, or complete negative?” [Popular Mobilization Forces]</i>
U.S. reliability	<i>“To what extent do you think each of the following countries is a reliable partner to Iraq – a great deal, a fair amount, not very much, or not at all?” [The United States]</i>

Table A4: Replication of Base and Local Models with Ordered Logit Regressions

	Airstrikes Target PMF	Airstrikes Help ISIL	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>				
Shi'a Arab	0.34 (0.23)	0.06 (0.23)		
Sunni Arab	-0.65** (0.24)	-0.87*** (0.24)		
Kurd	-1.50*** (0.31)	-2.46*** (0.32)		
Confidence in U.S.	-0.48*** (0.05)	-0.37*** (0.05)	-0.21* (0.09)	-0.05 (0.09)
Support for PMF	0.20** (0.07)	0.24** (0.07)	-0.27* (0.13)	-0.22 (0.13)
<i>Information streams</i>				
Iraqiyya TV	0.17*** (0.05)	0.04 (0.05)	0.16 (0.10)	0.15 (0.10)
Sharqiyya TV	-0.33*** (0.04)	-0.23*** (0.04)	-0.48*** (0.12)	-0.40*** (0.11)
Rudaw TV	-0.31*** (0.08)	-0.28*** (0.08)	-0.24 (0.16)	-0.07 (0.15)
<i>Personal experiences</i>				
Lived under ISIL	-0.26* (0.13)	-0.34** (0.13)		
Time under ISIL			-0.39*** (0.07)	-0.35*** (0.07)
<i>Cut points</i>				
1 st cut point	-3.10*** (0.35)	-3.32*** (0.35)	-5.17*** (0.59)	-4.16*** (0.55)
2 nd cut point	-1.32*** (0.34)	-1.58*** (0.34)	-2.68*** (0.56)	-2.24*** (0.53)
3 rd cut point	-1.23*** (0.34)	-1.47*** (0.34)	-2.67*** (0.56)	-2.22*** (0.53)
4 th cut point	0.78* (0.34)	0.76* (0.34)	-0.38 (0.55)	0.36 (0.53)
Observations	2,263	2,263	534	535

Notes: Results from ordered logistic regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A5: Full Results for Base Models with Distance to Coalition Airstrikes

	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>		
Shi'a Arab	0.06 (0.15)	0.01 (0.15)
Sunni Arab	-0.42** (0.15)	-0.51*** (0.15)
Kurd	-0.97*** (0.20)	-1.42*** (0.20)
Confidence in U.S.	-0.30*** (0.03)	-0.22*** (0.03)
Support for PMF	0.13** (0.05)	0.16*** (0.05)
<i>Information streams</i>		
Iraqiyya TV	0.10*** (0.03)	0.03 (0.03)
Sharqiyya TV	-0.22*** (0.03)	-0.15*** (0.03)
Rudaw TV	-0.18*** (0.05)	-0.14** (0.05)
<i>Personal experiences</i>		
Lived under ISIL	-0.21* (0.08)	-0.24** (0.08)
Distance to airstrike	0.00*** (0.00)	0.00** (0.00)
Constant	2.77*** (0.21)	2.79*** (0.21)
Observations	2,263	2,263
R ²	0.34	0.33

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

**** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$*

Table A6: Replication of Base and Local Models, with Sunni Arabs Only

	Airstrikes Target PMF	Airstrikes Help ISIL	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>				
Confidence in U.S.	-0.09* (0.04)	-0.03 (0.04)	-0.06 (0.05)	-0.01 (0.06)
Support for PMF	0.02 (0.06)	0.03 (0.06)	-0.16* (0.08)	-0.11 (0.08)
<i>Information streams</i>				
Iraqiyya TV	0.04 (0.04)	-0.02 (0.05)	0.11 (0.06)	0.12 (0.06)
Sharqiyya TV	-0.22*** (0.05)	-0.18*** (0.05)	-0.25*** (0.07)	-0.23** (0.07)
Rudaw TV	-0.28*** (0.08)	-0.26** (0.08)	-0.20* (0.09)	-0.11 (0.10)
<i>Personal experiences</i>				
Lived under ISIL	-0.29** (0.09)	-0.29** (0.09)		
Time under ISIL			-0.20*** (0.04)	-0.22*** (0.04)
Constant	2.63*** (0.24)	2.48*** (0.25)	3.26*** (0.32)	3.23*** (0.33)
Observations	975	980	522	523
R ²	0.12	0.12	0.23	0.20

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

**** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$*

Table A7: Replication of Base and Local Models, with Measures of Attitudes toward ISIL

	Airstrikes Target PMF	Airstrikes Help ISIL	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>				
Shi'a Arab	0.20 (0.15)	0.08 (0.15)		
Sunni Arab	-0.45** (0.15)	-0.53*** (0.15)		
Kurd	-0.96*** (0.20)	-1.43*** (0.20)		
Confidence in U.S.	-0.31*** (0.03)	-0.23*** (0.03)	-0.11* (0.05)	-0.02 (0.06)
Support for PMF	0.14** (0.05)	0.17*** (0.05)	-0.14 (0.08)	-0.08 (0.08)
<i>Information streams</i>				
Iraqiyya TV	0.10** (0.03)	0.03 (0.03)	0.12 (0.06)	0.10 (0.06)
Sharqiyya TV	-0.22*** (0.03)	-0.15*** (0.03)	-0.29*** (0.07)	-0.25*** (0.07)
Rudaw TV	-0.17*** (0.05)	-0.13** (0.05)	-0.23* (0.10)	-0.15 (0.10)
<i>Personal experiences</i>				
Lived under ISIL	-0.22** (0.08)	-0.26** (0.08)		
Time under ISIL			-0.20*** (0.04)	-0.20*** (0.04)
<i>Attitudes toward ISIL</i>				
Support for ISIL	-0.11 (0.12)	-0.09 (0.12)	-0.01 (0.32)	-0.46 (0.34)
ISIL influence positive	0.07 (0.06)	0.14* (0.06)	0.08 (0.10)	0.15 (0.11)
Distance to ISIL attack	0.00 (0.00)	0.00 (0.00)	0.06 (0.04)	0.06 (0.04)
Constant	2.89*** (0.22)	2.82*** (0.21)	3.33*** (0.33)	3.01*** (0.34)
Observations	2,219	2,220	525	526
R ²	0.33	0.32	0.25	0.20

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

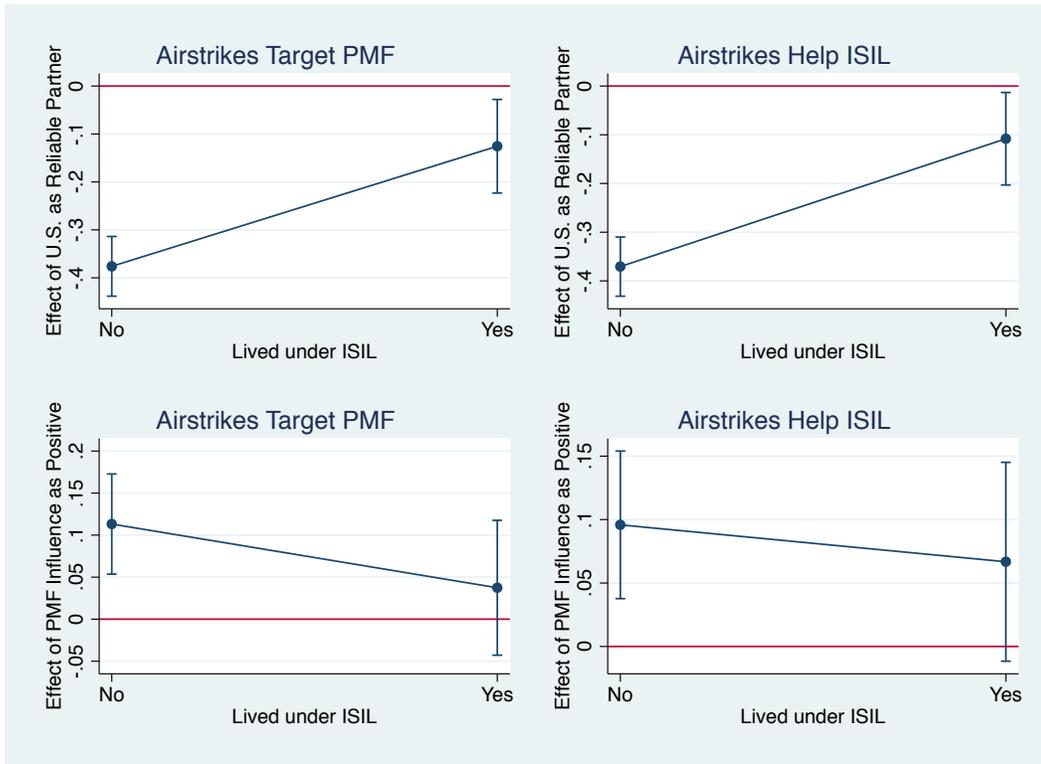
Table A8: Replication of Base and Local Models, with Enumerator Observations

	Airstrikes Target PMF	Airstrikes Help ISIL	Airstrikes Target PMF	Airstrikes Help ISIL
<i>Existing orientations</i>				
Shi'a Arab	0.18 (0.15)	0.08 (0.15)		
Sunni Arab	-0.46** (0.15)	-0.52*** (0.15)		
Kurd	-0.93*** (0.20)	-1.38*** (0.20)		
Confidence in U.S.	-0.30*** (0.03)	-0.22*** (0.03)	-0.09 (0.05)	-0.00 (0.05)
Support for PMF	0.13** (0.05)	0.16*** (0.05)	-0.13 (0.08)	-0.09 (0.08)
<i>Information streams</i>				
Iraqiyya TV	0.11*** (0.03)	0.03 (0.03)	0.12 (0.06)	0.12 (0.06)
Sharqiyya TV	-0.21*** (0.03)	-0.15*** (0.03)	-0.26*** (0.07)	-0.25*** (0.07)
Rudaw TV	-0.21*** (0.05)	-0.17*** (0.05)	-0.21* (0.10)	-0.11 (0.10)
<i>Personal experiences</i>				
Lived under ISIL	-0.26** (0.08)	-0.26** (0.08)		
Time under ISIL			-0.20*** (0.04)	-0.20*** (0.04)
<i>Enumerator observations</i>				
Privacy	-0.00 (0.06)	0.06 (0.06)	0.12 (0.10)	0.18 (0.10)
Comfort	-0.16 (0.09)	-0.29** (0.09)	-0.14 (0.24)	-0.75** (0.25)
Honesty	0.09 (0.12)	0.19 (0.12)	0.01 (0.30)	0.17 (0.31)
Comprehension	-0.11** (0.04)	-0.08* (0.04)	0.00 (0.06)	-0.03 (0.06)
Constant	3.21*** (0.26)	3.02*** (0.26)	3.26*** (0.48)	3.54*** (0.50)
Observations	2,263	2,263	534	535
R ²	0.34	0.33	0.24	0.21

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure A3: Replication of Interaction Plots, with Alternative Measures of Support for the U.S. and PMF



Note: figure shows marginal effect of perceptions that the U.S. is reliable and that the PMF's influence is positive by experience under ISIL rule. Results from OLS regressions, with 95% confidence intervals.